

## **Andrew J. Tyre**

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### ***Citizenship***

Canadian (Resident Alien, USA)

### ***Education***

1996 - 1999 Phd. University of Adelaide  
1991 - 1994 MSc. Simon Fraser University  
1987 - 1991 BSc. with Honours in Zoology, University of Alberta

### ***Professional Experience***

2015 – Present Professor, School of Natural Resources, University of Nebraska-Lincoln.  
2009 – 2015 Associate Professor, School of Natural Resources, University of Nebraska-Lincoln.  
2003 – 2009 Assistant Professor, School of Natural Resources, University of Nebraska-Lincoln.  
2002 - 2003 Research Scientist, CSIRO Marine Research, Cleveland, Queensland, Australia.  
1999 - 2001 Postdoctoral Fellow with Prof. Hugh Possingham, University of Queensland  
1994 - 1995 Research Assistant with Dr. Bernie Roitberg, Simon Fraser University  
1994 Research Assistant with Dr. John Addicott, University of Alberta

### ***Scholarships and Awards***

2006 IANR Junior Faculty Award for Research Excellence  
1996 NSERC Postgraduate Scholarship B  
1993 Simon Fraser University Graduate Fellowship  
1991 NSERC Postgraduate Scholarship A  
NSERC Summer Undergraduate Research Award  
1990 NSERC Summer Undergraduate Research Award

- Elizabeth Bentley Memorial Scholarship
- 1989 NSERC Summer Undergraduate Research Award  
Elizabeth Bentley Memorial Scholarship
- 1987 Alexander Rutherford University Entrance Scholarship

***Current and Past Support***

- 2016 UNL Visiting Scholar Grant for Dr. Elizabeth Crone. \$790
- 2016 Structured Decision Making Coach – Black Vulture Livestock interaction management. Subcontract with DJ Case and Associates for USFWS and USDA Aphis Wildlife Services. \$8,800.
- 2014 Analysis of Age-at-harvest data for Mule and White tail deer populations in Nebraska, Nebraska Game and Parks Commission, \$59,193.30. (Private contract for Sabbatical Leave).
- 2012-2013 Developing a stochastic population reconstruction method for Mule Deer populations in Nebraska, Nebraska Game and Parks Commission, \$25,000.
- 2012 Conference on Mathematical Ecology. National Science Foundation \$14,600.
- 2011-2012 Developing a stochastic population reconstruction method for Cougar Populations in Oregon, Oregon Department of Fisheries and Wildlife, \$40,650
- 2010 Risk and Uncertainty Unplugged: Integrating perspectives from across the disciplines, College of Arts and Sciences UNL, \$5200
- 2010-2011 Quantifying uncertainty for Missouri River Management, USACE via USGS Cooperative Agreement \$173,579
- 2010-2012 Survey Data of Sandhill Crane. Platte River Whooping Crane Trust \$46,686.
- 2009-2014 IGERT: Resilience and Adaptive Governance in Stressed Watersheds NSF, \$3,116,173
- 2009-2010 Quantifying uncertainty for Missouri River Management, Andrew J Tyre and Erkan Istanbuluoglu, USACE via USGS Cooperative Agreement \$247,104
- 2008 Contract Technical Support for Adaptive Management of Habitat Restoration Projects on the Missouri River, USACE \$42,000
- 2008-2009 Metapopulation modeling for: An adaptive management system for conservation of the Interior Least Tern and Piping Plover on the lower Platte River system, Nebraska Game and Parks Commission, \$12,000
- 2008-2009 Adaptive Resource Management framework for Farm Bill decisions: research and teaching for improving outcomes for wildlife. Larkin Powell and Andrew J. Tyre. Natural Resources Conservation Service, USDA. \$72,000
- 2007 Nebraska West Nile Virus Surveillance, Nebraska Health and Human Services Department. \$44,545
- 2006 An adaptive management approach for selecting habitat improvement targets in the shortgrass prairie ecosystem. Nebraska Game and Parks Commission. \$62,747.97

- 2006-2008 Western nebraska grassland bird conservation: closing the adaptive loop with population monitoring and implementation of field clearing, State Wildlife Grants, Nebraska Game and Parks Commission Total Amount: \$129,990
- 2006 Nebraska West Nile Virus Surveillance, Nebraska Health and Human Services Department. \$46, 811
- 2005-2009 UBM: Research for Undergraduates in Theoretical Ecology (RUTE). Primary Investigators: Glenn W. Ledder, Bo Deng, Irakli,Loladze, Robert M. Gibson, Svata M. Louda, Senior Scientists: Brigitte Tenhumberg, D. Logan, D. Pilson, Jean Knopf, Andrew J. Tyre. Total Amount: \$905000
- 2004 Andrew J. Tyre UNL Layman Fund Award "Are mosquito vectors of West Nile Virus affected by wetland size and landscape context?" \$9,982
- 2004-2006 Australian Research Council Discovery Grant "Population response to climate change in a host-parasite system" with Prof. C. Michael Bull (Flinders University of South Australia). Australian Research Council A\$225,000
- 2002-2004 Australian Research Council Linkage Grant "Predicting metapopulation dynamics with multiple patch states" with Prof. Hugh Possingham and Western Mining Corporation Pty Ltd. Australian Research Council A\$180,000 Western Mining Corporation A\$75,000 plus in kind contributions.
- \*1999-2001 Australian Research Council Strategic Partnerships in Industry Grant "Risk management for ecologically sustainable development: predicting extinction and recolonisation in the Mound Springs of SA" with Prof. Hugh Possingham and Western Mining Corporation Pty Ltd. ARC \$130,000 WMC \$75,000 plus in kind contributions.
- \*1999-2001 Australian Research Council Large Grant "Optimal habitat reconstruction for the Mount Lofty Ranges" with Prof. Hugh Possingham. Australian Research Council \$150,000.
- \*I was not eligible to be listed as an investigator on these grants, but the extent of my involvement in their development and implementation can be confirmed by Prof. Possingham.

## ***Publications***

### **2017**

Sarangi, D., A. Tyre, E. Patterson, T. Gaines, S. Irmak, S.Z. Knezevic, J. Lindquist, and A.J. Jhala (2017). Pollen-mediated gene flow from glyphosate-resistant common waterhemp (*Amaranthus rudis* Sauer): consequences for dispersal of resistance genes. *Nature Scientific Reports* 7:44913 DOI:10.1038/srep44913.

### **2016**

Cohen, J.B., Hecht, A., Robinson, K.F., Osnas, E.E., Tyre, A.J., Davis, C., Kocek, A., Maslo, B., & Melvin, S.M. (2016) To exclose nests or not: structured decision making for the conservation of a threatened species. *Ecosphere* 7(10):e01499.

### **2015**

Hiller, T. L., Belant, J. L., Beringer, J., & Tyre, A. J. (2015). Resource selection by recolonizing American black bears in a fragmented forest landscape. *Ursus*, 26(2), 116-128.

- TJ Hefley, DM Baasch, AJ Tyre, EE Blankenship (2015) Use of opportunistic sightings and expert knowledge to predict and compare Whooping Crane stopover habitat *Conservation Biology* 29(5):1337-46.
- Hiller, T. L., Taylor, J. S., Lusk, J. J., Powell, L. A. and Tyre, A. J. (2015), Evidence that the conservation reserve program slowed population declines of pheasants on a changing landscape in Nebraska, USA. *Wildl. Soc. Bull.*, 39: 529–535.
- Hiller, T. L., Mcfadden-Hiller, J. E., Jenkins, S. R., Belant, J. L. and Tyre, A. J. (2015), Demography, prey abundance, and management affect number of cougar mortalities associated with livestock conflicts. *The Journal of Wildlife Management*, 79: 978–988.
- Brigitte Tenhumberg, Tomomi Suwa, Andrew J. Tyre, F. Leland Russell, and Svata M. Louda (2015) Integral projection models show exotic thistle is more limited than native thistle by ambient competition and herbivory. *Ecosphere* 6:art69.

## 2014

- KE Buenau, TL Hiller, AJ Tyre (2014) Modelling the effects of river flow on population dynamics of piping plovers (*Charadrius melodus*) and least terns (*Sternula antillarum*) nesting on the Missouri River River Research and Applications 30 (8), 964-975
- Hiller, T. L., & Tyre, A. J. (2014). Comparison of Two Age-Estimation Techniques for Cougars. *Northwestern Naturalist*, 95(2), 77-82.
- Schapaugh, Adam W. and **Andrew J. Tyre** (2014) Maximizing a new quantity in sequential reserve selection. *Environmental Conservation*. 41:198-205.
- Vantassel, Stephen M., Andrew J. Tyre, and Scott E. Hygnstrom (2014) An evaluation of two traps and sets for trapping the plains pocket gopher. *Human-Wildlife Interactions* 8:100-107.
- Marion Pfeifer, Veronique Lefebvre, Toby A. Gardner, Victor Arroyo-Rodriguez, Lander Baeten, Cristina Banks-Leite, Jos Barlow, Matthew G. Betts, Joerg Brunet, Alexis Cerezo, Laura M. Cisneros, Stuart Collard, Neil D'Cruze, Catarina da Silva Motta, Stephanie Duguay, Hilde Eggermont, Felix Eigenbrod, Adam S. Hadley, Thor R. Hanson, Joseph E. Hawes, Tamara Heartsill Scalley, Brian T. Klingbeil, Annette Kolb, Urs Kormann, Sunil Kumar, Thibault Lachat, Poppy Lakeman Fraser, Victoria Lantschner, William F. Laurance, Inara R. Leal, Luc Lens, Charles J. Marsh, Guido F. Medina-Rangel, Stephanie Melles, Dirk Mezger, Johan A. Oldekop, William L. Overal, Charlotte Owen, Carlos A. Peres, Ben Phalan, Anna M. Pidgeon, Oriana Pilia, Hugh P. Possingham, Max L. Possingham, Dinarzarde C. Raheem, Danilo B. Ribeiro, Jose D. Ribeiro Neto, W Douglas Robinson, Richard Robinson, Trina Rytwinski, Christoph Scherber, Eleanor M. Slade, Eduardo Somarriba, Philip C. Stouffer, Matthew J. Struebig, Jason M. Tylianakis, Teja Tschardtke, **Andrew J. Tyre**, Jose N. Urbina Cardona, Herald L. Vasconcelos, Oliver Wearn, Konstans Wells, Michael R. Willig, Eric Wood, Richard P. Young, Andrew V. Bradley and Robert M. Ewers. 2014. BIOFRAG – a new database for analyzing BIODiversity responses to forest FRAGmentation. *Ecology and Evolution*. 4:1524–1537.

Post van der Burg, M., Bly, B. B., Vercauteren, T., Grand, J. B., & **Tyre, A. J.** (2014). On the role of budget sufficiency, cost efficiency, and uncertainty in species management. *The Journal of Wildlife Management*. 78:153-163.

Hefley, T. J., Baasch, D. M., Tyre, A. J., & Blankenship, E. E. (2014). Correction of location errors for presence-only species distribution models. *Methods in Ecology and Evolution*. 5:207-214.

## 2013

Hefley, T. J., Tyre, A. J., Baasch, D. M., & Blankenship, E. E. (2013d). Nondetection sampling bias in marked presence-only data. *Ecology and Evolution*, 3(16), 5225-5236.

Hefley, T. J., Tyre, A. J., & Blankenship, E. E. (2013c). Fitting population growth models in the presence of measurement and detection error. *Ecological Modelling*, 263, 244-250.

Trevor J. Hefley, Scott E. Hygnstrom, Jason M. Gilsdorf, Gregory M. Clements, Myndi J. Clements, Andrew J. Tyre, David M. Baasch, and Kurt C. VerCauteren (2013b) Effects of Deer Density and Land Use on Mass of White-Tailed Deer. *Journal of Fish and Wildlife Management*. 4, 20-32.

Matthews, T. W., **Tyre, A. J.**, Taylor, J. S., Lusk, J. J., & Powell, L. A. (2013). Greater prairie-chicken nest success and habitat selection in southeastern Nebraska. *The Journal of Wildlife Management*.

Hefley, Trevor J., **Andrew J. Tyre**, Erin E. Blankenship (2013a) Statistical indicators and state-space population models predict extinction in a population of bobwhite quail. *Theoretical Ecology* 6:319-331.

Schapaugh, Adam W. and **Andrew J. Tyre** (2013) Accounting for parametric uncertainty in Markov decision processes. *Ecological Modelling* 254:15-21.

## 2012

Jorgensen, Joel G., Mary Bomberger Brown, and **Andrew J. Tyre** (2012) Channel Width and Least Tern and Piping Plover Nesting Incidence on the Lower Platte River, Nebraska. *Great Plains Research* 22:59-67.

Schapaugh, Adam W. and **Andrew J. Tyre** (2012) A simple method for dealing with large state spaces. *Methods in Ecology and Evolution* 3:949-957.

Schapaugh, Adam W. and **Andrew J. Tyre** (2012) Bayesian networks and the quest for reserve adequacy. *Biological Conservation* 152:178-186.

Sarah Michaels and **Andrew J. Tyre** (2012) How indeterminism shapes ecologists' contributions to managing socio-ecological systems. *Conservation Letters* 5:289-295.

## 2011

Hefley, Trevor and **Andrew J. Tyre** (2011) Favorable Team Scores Under the Team-Based Learning Paradigm: A Statistical Artifact? *RURALS: Review of Undergraduate Research in Agricultural and Life Sciences*: Vol. 6: Iss. 1, Article 1. Available at: <http://digitalcommons.unl.edu/rurals/vol6/iss1/1>

**Andrew J. Tyre**, James T. Peterson, Sarah J. Converse, Tiffany Bogich, Damien Miller, Max Post van der Burg, Carmen Thomas, Ralph Thompson, Jeri Wood,

Donna C. Brewer, Michael C. Runge (2011) Adaptive Management of Bull Trout Populations in the Lemhi Basin. *Journal of Fish and Wildlife Management*. December 2011, Vol. 2, No. 2, pp. 262-281

- W. David Walter, David M. Baasch, Scott E. Hygnstrom, Bruce D. Trindle, **Andrew J. Tyre**, Joshua J. Millspaugh, Charles J. Frost, Justin R. Boner & Kurt C. VerCauteren. (2011) Space use of sympatric deer in a riparian ecosystem in an area where chronic wasting disease is endemic. *Wildlife Biology*, 17(2):191-209.
- Matthews, T. W., **A. J. Tyre**, J. S. Taylor, J. J. Lusk, and L. A. Powell. 2011. Habitat selection and brood survival of Greater Prairie-Chickens. Pp. 179–191 in B. K. Sandercock, K. Martin, and G. Segelbacher (editors). *Ecology, conservation, and management of grouse. Studies in Avian Biology* (no. 39), University of California Press, Berkeley, CA.
- Powell, L. A. **A. J. Tyre**, M. J. Conroy, J. T. Peterson, and B. K. Williams. 2011. Integrating adaptive management into wildlife curricula. *The Wildlife Professional*. 5(2): 74-76
- Hiller, T.L., D.R. Etter, J.L. Belant, **A. J. Tyre**. 2011. Factors Affecting Harvests of Fishers and American Martens in Northern Michigan. *Journal of Wildlife Management* 75(6):1399-1406.
- Quinn, J.E., J. R. Brandle, R. J. Johnson, **A. J. Tyre**. 2011. Application of detectability in the use of indicator species: A case study with birds. *Ecological Indicators* 11(5):1413-1418.
- Max Post van der Burg and **Andrew J. Tyre** 2011. Integrating info-gap decision theory with robust population management: a case study using the mountain plover. *Ecological Applications* 21:303-312.
- Giovanni, M. D., M. Post van der Burg, L. C. Anderson, L. A. Powell, W. H. Schacht, and **A. J. Tyre**. 2011. Estimating nest density when nest detectability is incomplete: variation in nest attendance and response to disturbance by adult Western Meadowlarks. *Condor* 113:223-232.
- Jaime McFadden, Tim L. Hiller and **Andrew J. Tyre** 2011. Evaluating the Efficacy of Adaptive Management Approaches: Is there a Formula for Success? *Journal of Environmental Management* 92:1354-1359.
- Andrew J. Tyre** and Sarah Michaels 2011. Confronting socially generated uncertainty in adaptive management. *Journal of Environmental Management* 92:1365-1370.

## 2010

- Max Post van der Burg, Bartholomew Bly, Tammy VerCauteren and **Andrew J. Tyre**. 2010. Making better sense of monitoring data from low density species using a spatially explicit modeling approach. *Journal of Applied Ecology* 48:47-55.
- Max Post van der Burg, **Andrew J. Tyre**, Larkin A. Powell (2010) Finding the smoothest path to success: model complexity and the consideration of non-linear patterns in nest survival data. *Condor* 112:421-431.

David M. Baasch, Justin W. Fischer, Scott E. Hygnstrom, Kurt C. VerCauteren, **Andrew J. Tyre**, Joshua J. Millspaugh, James W. Merchant, Jerry D. Volesky (2010) Resource selection by elk in an agro-forested landscape of northwestern Nebraska. *Environmental Management*. 46:725-737.

Justin D. Hoffman, Naikoa Aguilar-Amuchastegui, and **Andrew J. Tyre** (2010). Use of simulated data from a process-based habitat model to evaluate methods for predicting species occurrence. *Ecography* 33:656-666.

Tim L. Hiller, J. P. Burroughs, H. Campa, M. K. Cosgrove, B. A. Rudolph, and **Andrew J. Tyre**. 2010. Sex-Age Selectivity and Correlates of Capture for Winter-Trapped White-Tailed Deer. *Journal of Wildlife Management* **74**:564-572.

David M. Baasch, **Andrew J. Tyre**, Joshua J. Millspaugh, Scott E. Hygnstrom, Kurt C. VerCauteren (2010) An evaluation of three statistical methods used to model resource selection. *Ecological Modelling* 221:565-574.

## 2009

Tim L. Hiller and **Andrew J. Tyre** (2009) Investigating active learning strategies in wildlife ecology college courses. *North American Colleges and Teachers of Agriculture Journal*. 53:36-41.

Powell, L., S. Riley, A. Tyre, and S. Hygnstrom. 2009. The value of early experience: students know they need it, but how do they get it? *The Wildlife Professional* 3(4):45-47.

Powell, L.A., **A.J. Tyre**, S.E. Hygnstrom, D.A. Wedin, P.R. Hanson, M.S. Kuzila, and J.B. Swinehart. (2009) Wilderness serendipity: planning and assessing learning during an experiential field course. *North American Colleges and Teachers of Agriculture Journal* 53:56-61.

Frost, C. J., S. E. Hygnstrom, **A. J. Tyre**, K. M. Eskridge, D. M. Baasch, J. R. Boner, G. M. Clements, J. M. Gilsdorf, T. C. Kinsell, and K. C. Vercauteren. (2009) Probabilistic movement model with emigration simulates movements of deer in Nebraska, 1990-2006. *Ecological Modelling* 220:2481-2490.

Post van der Burg, M., Larkin. A. Powell, and **Andrew J. Tyre**. (2009). Modelling parasitism rate and parasitism risk: an illustration using a colonially nesting songbird. *Journal of Avian Biology* 40:263-270.

Brigitte Tenhumberg, **Andrew J. Tyre**, Richard Rebarber (2009) Model complexity affects predicted transient population dynamics following a dispersal event: A case study with *Acyrtosiphon pisum*. *Ecology* 90:1878-1890.

## 2008

Don Wardwell, Craig R. Allen, Garry D. Peterson and **Andrew J. Tyre** (2008). A test of the cross-scale resilience model: functional richness in Mediterranean-climate ecosystems. *Ecological Complexity* 5(2):165-182

## 2007

Joan Lubben, Brigitte Tenhumberg, **Andrew J. Tyre**, Richard Rebarber (2007) Management Recommendations Based on Matrix Projection Models: The

Importance of Considering Biological Limits. *Biological Conservation*. 141, 517-523.

Robert J. Toonen and **Andrew J. Tyre** (2007) If larvae were smart: a simple model for optimal settlement behavior of competent larvae. *Marine Ecology Progress Series*. 349. 43-61.

Aly Deines, Ellen Peterson, Derek Boeckner, James Boyle, Amy. Keighley, Joy Kogut, Joan Lubben, Richard. Rebarber, Richard Ryan, Brigitte. Tenhumberg, Stuart Townley, **Andrew J. Tyre** (2007) Robust population management under uncertainty for structured population models. *Ecological Applications* 17(8):2175-2138.

**Andrew J. Tyre**, Gregory D. Kerr, Brigitte Tenhumberg, and C. Michael Bull (2007) Identifying mechanistic models of spatial behaviour using pattern-based modelling: an example from lizard home ranges. *Ecological Modelling* 208:307-316.

Scott Field, Patrick O'Connor, **Andrew J. Tyre**, & Hugh Possingham (2007) Making Monitoring Meaningful. *Austral Ecology* 32:485-491.

## 2006

Atte Moilanen, Michael C. Runge, Jane Elith, **Andrew J. Tyre**, Yohay Carmel, Eric Fegraus, Brendan Wintle, Mark Burgman and Yakov Ben-Haim (2006) Planning for robust reserve networks using uncertainty analysis. *Ecological Modelling* 199:115-124.

**Andrew J. Tyre**, Brigitte Tenhumberg & C. Michael Bull. (2006) Identifying landscape pattern from individual scale processes. *Ecological Modelling* 199: 442-450.

Tom E.X. Miller, **Andrew J. Tyre** and Svata M. Louda (2006) Plant reproductive allocation predicts herbivore dynamics across spatial and temporal scales. *The American Naturalist* 168: 608-616.

Jonathan Rhodes, **Andrew J. Tyre**, Niclas Jonzen, Clive McAlpine, Hugh Possingham. (2006) Optimising presence/absence surveys for detecting population trends. *Journal of Wildlife Management* 70(1):8-18.

## 2005

Martin, T.G., Wintle, B.A., Rhodes, J.R., Kuhnert, P.M., Field, S.A., Low-Choy, S.J., **Tyre, A.J.**, Possingham, H.P. (2005) Zero tolerance ecology: improving ecological inference by modelling the source of zero observations. *Ecology Letters*, 8, 1235 -1246.

Scott Field, **Andrew J. Tyre**, Katherine Thorn, Patrick O'Connor, Hugh P. Possingham (2005) Improving the efficiency of wildlife monitoring by estimating detectability: a case study of foxes (*Vulpes vulpes*) on the Eyre Peninsula, South Australia. *Wildlife Research* 32: 253-258

Scott Field, **Andrew J. Tyre**, Hugh P. Possingham. (2005) Optimizing landscape-scale monitoring under economic and observational constraints. *Journal of Wildlife Management* 69:473-482.

## 2004

Brigitte Tenhumberg, **Andrew J. Tyre**, Katriona Shea & Hugh Possingham. (2004) Linking wild and captive populations to maximize species persistence: optimal translocation strategies. *Conservation Biology* 18, 1304-1314.

Brigitte Tenhumberg, **Andrew J. Tyre**, Anthony Pople & Hugh Possingham. (2004) Do harvest refuges buffer Kangaroos against evolutionary responses to selective harvesting? *Ecology* 85, 2003-2017.

Scott Field, **Andrew J. Tyre**, Niclas Jonzén, Jonathan Rhodes & Hugh Possingham (2004) Minimizing the cost of environmental management decisions by optimizing statistical thresholds. *Ecology Letters* 7:669-675.

## 2003

**Andrew J. Tyre**, Brigitte Tenhumberg, Scott Field, Darren Niejalke, Kirsten Parris, Hugh Possingham. (2003) Improving precision and reducing bias in biological surveys by estimating false negative error rates in presence-absence data. *Ecological Applications*. 13, 1790-1801

Michael I. Westphal, Scott A. Field, **Andrew J. Tyre**, David Paton and Hugh P. Possingham. (2003) Effects of landscape pattern on bird species distribution in the Mt. Lofty Ranges, South Australia. *Landscape Ecology*. 18, 413-426

**Andrew J. Tyre**, C. Michael Bull, Brigitte Tenhumberg, Neil Chilton. (2003) Indirect evidence of density dependent population regulation in *Aponomma hydrosauri* (Acari: Ixodidae), an ectoparasite of reptiles. *Austral Ecology*. 28: 196-203

## 2002

Scott Field, **Andrew J. Tyre**, Max Possingham, Hugh Possingham (2002) Estimating bird species richness: how should repeat surveys be organized in time? *Austral Ecology* 27:624-629.

## 2001

Brigitte Tenhumberg, Hugh Possingham, **Andrew J. Tyre**. (2001) The effect of resource aggregation on different scales: optimal foraging behaviour of *Cotesia rubecula*. *The American Naturalist* 158 (5): 505-518.

Brigitte Tenhumberg, Mike Keller, Hugh Possingham, **Andrew J. Tyre**. (2001) Optimal patch leaving behaviour: a case study using the parasitoid *Cotesia rubecula*. *Journal of Animal Ecology* 70: 683-691.

**Andrew J. Tyre**, Hugh P. Possingham, David B. Lindenmayer. (2001) Matching observed pattern with model process: can territory occupancy provide information about life history parameters. *Ecological Applications* 11 (6): 1722-1737.

**Andrew J. Tyre**, Hugh P. Possingham, Darren P. Niejalke. (2001) Detecting environmental impacts on metapopulations of mound spring invertebrates - Assessing an incidence function model, *Environment International* 27 (2-3): 225-229.

Michael A. McCarthy, Hugh P. Possingham, Jemery Day, and **Andrew J. Tyre**. (2001) Testing the accuracy of population viability analysis. *Conservation Biology*: 15 (4), 1030-1038.

## 2000

**Andrew J. Tyre**, Brigitte Tenhumberg, Michael A. McCarthy, and Hugh P. Possingham. (2000) Swapping space for time and unfair tests of ecological models. *Australian Journal of Ecology* 25: 327-331.

**Andrew J. Tyre** and Brigitte Tenhumberg. (2000) Hidden mechanisms generate negative feedbacks in a stochastic model. *Australian Journal of Ecology* 25:305-307.

Brigitte Tenhumberg, **Andrew J. Tyre**, and Bernard D. Roitberg. (2000) Stochastic variation in food availability influences weight and age at maturity. *Journal of Theoretical Biology* 202:257-272.

### **1999 and earlier**

**Andrew J. Tyre**, Hugh P. Possingham, David B. Lindenmayer. (1999) Modelling dispersal behaviour on a fractal landscape. *Environmental Modelling and Software* 14:103-113

Amos Bouskila, Ian C. Robertson, Mike Robinson, Bernard D. Roitberg, Brigitte Tenhumberg, **Andrew J. Tyre**, Ed van Randen. (1995) Submaximal oviposition rates in a mymarid parasitoid: choosiness should not be ignored. *Ecology* 76(6):1990-1993

John F. Addicott and **Andrew J. Tyre** (1995) Cheating by yucca moths: How often do yucca moths benefit yuccas? *Oikos* 72:382-394

**Andrew J. Tyre** and John F. Addicott. (1994) Facultative non-mutualistic behaviour by an "obligate" mutualist: "cheating" by yucca moths. *Oecologia* 94:173-175

### ***Refereed Conference Proceedings***

**Andrew J. Tyre**, Brigitte Tenhumberg & C. Michael Bull (2004) The role of local spatial heterogeneity in the maintenance of parapatric boundaries: agent based models of competition between two parasitic ticks. *Proceedings International Environmental Modeling Society Symposium, Osnabrück, June 2004.*

Brigitte Tenhumberg, **Andrew J. Tyre** & Hugh Possingham (2001): Minimizing Extinction Risk of Endangered Species through Captive Breeding, *Proceedings, International Congress on Modelling and Simulation, Vol 4, Canberra, December 2001, 1713-1718.*

**Andrew J. Tyre**, Brigitte Tenhumberg, Darren Nijalke, Hugh Possingham (2001): Predicting Risk to Biodiversity as a Function of Aquifer Pressure in GAB Mound Spring. *Proceedings, International Congress on Modelling and Simulation, Canberra, December 2001. 825-829.*

**Andrew J. Tyre**, Hugh P. Possingham, and Darren P. Nijalke. (1999). Detecting Environmental Impacts on Metapopulations of Mound Spring Invertebrates: Assessing the Incidence Function Model. In: *Proceedings of the International Congress on Modelling and Simulation, Volume 3*, edited by Les Oxley, Frank Scrimgeour and Anthony Jakeman, University of Waikato, Hamilton, New Zealand. [ISBN (book) 0-86422-950-X]

**Andrew J. Tyre**, Hugh P. Possingham, David B. Lindenmayer. (1997) Spatially explicit models in ecology: population consequences of individual habitat selection behaviour. In: *Proceedings of MODSIM97 International Congress on*

modelling and simulation. (A. D. McDonald and M. McAleer, eds.). Modelling and Simulation Society of Australia, Inc.

**Andrew J. Tyre**, Hugh P. Possingham, C. Michael Bull. (1997) Characteristic scales in ecology: fact, fiction, or futility. In *Frontiers in Ecology: Building the Links*. (N. Klomp and I. Lunt, eds.). Elsevier Science, Oxford. (Presented at Ecological Society of Australia Conference, 1997)

### **Conference Papers/Presentations/ Workshops**

\* Invited presentations/Workshops \*\* all expenses paid. I do not include presentations by students with my name on them.

\*\* Lethal predator control for beach nesting birds on Atlantic coast. Structured Decision Making workshop for USFWS, Oct 1 – 5, 2017, Newburyport, MA.

\*\* Beyond adaptive management: how indeterminism shapes ecologists contributions to policy. Invited talk, Mississippi State University, Oct 9, 2015

\*Invited symposium speaker at International Congress for Conservation Biology in Baltimore, July 22, 2013 "Integrating Conservation Research and Practice: Social Processes for a High-Impact Research Agenda"

\*\* Beyond adaptive management: how indeterminism shapes ecologists contributions to policy. Keynote Address to Peter Yodzis Colloquium, University of Guelph, July 6, 2012.

\* Barriers and Bridges to AM: risk, uncertainty, and indeterminism. International Congress for Conservation Biology, Auckland, New Zealand, Dec 8, 2011.

Risk and uncertainty unplugged: Integrating perspectives from across disciplines. Ecological Society of America, Austin Texas, August 10, 2011

Managing restoration under uncertainty: Decision makers and population projection models. 4S Annual Meeting Cleveland, OH.

\*\*Rethinking barriers and bridges to AM for endangered species: risk, uncertainty, and indeterminism. University of South Dakota, Department of Biological Sciences, April 5, 2011.

\*\*Structured Decision Making workshop on vegetation management. Arkansas Post National Monument, AR, Oct 19-21, 2010.

\*\*Adaptive Management, Structured Decision Making and Rapid Prototyping, Columbia River Estuary Conference, Astoria OR, May 20-23, 2010.

Risk and uncertainty, 8th Annual Adaptive Management Working Group, Gainseville FL, Feb 20-23, 2009.

\*\*Risk and uncertainty, USGS Symposium on Adaptive Management, 72nd Midwest Fish and Wildlife Conference, Dec 2-6, 2009.

\*\*Studying large scale emergent properties: models and analyses of a parapatric boundary. Kansas State University.

- \*\*Adaptive Resource Management for Threatened and Endangered Species. Plenary speaker, Missouri River Natural Resources Committee Annual Meeting, Nebraska City, Feb 2007.
- \*\*Spatial N-mixture models for birds – adventures in estimation. Workshop on Detectability and Monitoring, Colorado State University, Ft. Collins CO, Feb 2007.
- Adaptive Resource Management for Threatened and Endangered Species, Joint USGS/USFWS workshop, Shepardstown, WV, Feb 2007
- Ecological Society of America 2006. Ecological Management under uncertainty.
- Assessing experiential learning in a wilderness field course. Powell, L. A., A. J. Tyre, S. E. Hygnstrom, and D. A. Wedin. 2006. Sixth biennial conference on University Education in Natural Resources, March 4-7, 2006, East Lansing, MI. (Abstract).
- Adaptive Resource Management for Threatened and Endangered Species, Joint USGS/USFWS workshop, Shepardstown, WV, Jan 2006
- \*The detectability-population model fusion: diagnosing landscape effects with multiple models, The Wildlife Society, Symposium on Effects of landscape change on grassland bird populations, Annual TWS meeting, 09/23/2005
- Detecting the effects of landscape change on Nebraska pheasant populations, Natural Areas Society, Natural Areas Society annual meeting, 09/18/2005
- \*\*Decision Making for Conservation. Center for Mathematics, University of Melbourne organized by Prof Mark Burgman, Feb 2005
- \*\*Adaptive Resource Management for Threatened and Endangered Species, Joint USGS/USFWS workshop, Shepardstown, WV, Jan 2005
- \*\* Department of Biology, University of Guelph, Studying large scale emergent properties: models and analyses of a parapatric boundary, Nov 2004.
- \*\*Department of Statistics, University of Nebraska-Lincoln. Zero tolerance ecology: the art of counting what you didn't see. Oct 20, 2004.
- Ecological Society of America 2004. Minimizing the cost of environmental management decisions by optimizing statistical thresholds.
- \*\*Department of Biological Sciences, University of Nebraska-Omaha. When is a little dispersal really a lot? Modeling tick dispersal on lizards and its effect on the dynamics of a parapatric boundary April 7, 2004.
- \*\*Decision Making for Conservation. NCEAS workshop Santa Barbara CA organized by Prof Mark Burgman, March 2004
- Ecological Society of America 2003. Could density dependent engorgement success regulate populations of ticks on Sleepy Lizards?
- Society for Conservation Biology 2003. Optimizing landscape-scale monitoring under economic and observational constraints.
- Ecological Society of America 2001. Fitting stochastic metapopulation models to patch occupancy data in the presence of sampling error.

- Ecological Society of Australia. 2000. Detecting Environmental Impacts on Metapopulations of Mound Spring Invertebrates: Assessing the Incidence Function Model. La Trobe University, Victoria, Australia.
- Ecological Society of America. 2000. Matching observed pattern with model process: can territory occupancy provide information about life history parameters.
- Society for Mathematical Biology. 2000. The effect of sampling error on estimates of local extinction and recolonisation in metapopulations. (Poster)
- International Behavioural Ecology Congress. 1996. Territory defence is a game against everyone. (Poster)
- Ecological Society of Australia. 1996. Virtual Ecology in action: testing the assumptions of habitat quality modelling.
- Entomological Society of Canada. 1994. The importance of alternative strategies to territoriality in the water strider *Limnoporus notabilis* (Heteroptera: Gerridae)
- Ecological Society of America. 1993. Facultative Non-mutualistic Behaviour by an Obligate Mutualist: a test of 3 hypotheses for "Cheating" in *Yucca* Moths. (With Dr. John Addicott)
- Pacific Ecology Conference. 1993. Food Threshold Territoriality and Aggressive Behaviour in Juvenile Waterstriders
- Annual Meeting of the Entomological Society of British Columbia. 1992. Aggressive Behaviour in Juvenile Waterstriders: Food Threshold Territoriality or Condition Dependent Cannibalism?

### ***Teaching Experience***

- 2016 – Present Spring, **Sampling, Data Management and Visualization** Graduate introduction to data collection, entry, and manipulation using R (23 students)
- 2016 – Present Fall, **Ecology lab** field based lab for sophomore ecology class (60 students)
- 2004 - Present Spring, **Biology of Wildlife Populations** senior level course on Applied Population Ecology using problem based learning methodology (13-55 students; not offered 2010, 2012, 2014)
- 2004 – Present Fall, **Ecological Statistics** graduate level parameter estimation for ecological models; Linear models, Generalised linear models, mixed models (7-30 students)
- 2017 Summer, **Population models and structured decision making** graduate short course for King Mongkutt Technical University, Bangkok, Thailand.
- 2015 Summer, **Population models and structured decision making** graduate short course for King Mongkutt Technical University, Bangkok, Thailand.
- 2012 – Spring, **Statistics for life sciences** introductory course in statistics for life sciences students, developed for the first time at UNL.
- 2008, 2010, 2012 Instructor for 1 week summer short course in Adaptive Management
- 2005 – 2010, **Introduction to Natural Resources** freshman orientation class, field work, readings, discussion (30-50 students)

- 2005 – 2008 every other Fall **Senior Seminar** various topics; 2008 Adaptive Management *sensu* Department of Interior via service learning. (24 students in 2008)
- 2001 Developed and delivered 1/3 of a course on quantitative ecological methods, 1/6 of a course in mathematical biology
- 1999 Developed and delivered a short course on mathematical ecology for Secondary school teachers in collaboration with Dr. Ian Ball.
- 1998 Led an informal one semester long graduate seminar on Quantitative Ecology
- 1997 Tutor for 2nd year field camp in population ecology, University of Adelaide. Developed and led two field exercises in behavioural observation and spatial sampling.
- 1996 - 2000 Guest lecturer in 3rd Year subject - Ecological Modelling, University of Adelaide
- 1995 - 1996 Tutor for 1st year subject - Biomathematics and Statistics, University of Adelaide
- 1995 Teaching assistant 4th year subject - Evolutionary Psychology, Simon Fraser University

**Scholarly Service**

- 2016 – 2017 Co-chair Student Events Committee 76<sup>th</sup> Midwest Fisheries and Wildlife Conference
- 2016 – present Teaching Coordinator, School of Natural Resources, UNL
- 2016 Chair, Faculty search committee (Vertebrate Ecologist) School of Natural Resources, UNL
- 2015 Chair, Academic Review Committee, School of Natural Resources, UNL
- 2013 – present StackOverflow contributor (2016 reputation 638)
- 2013 – present CrossValidated contributor (2016 reputation 918)
- 2012 Member at large, Executive Committee of Biometrics Working Group, The Wildlife Society
- 2011-2013 Secretary, Statistical Ecology Section, Ecological Society of America.
- 2010-2012 SNR Promotion and Tenure Committee
- 2009-2013 Coordinator, Fisheries and Wildlife Major, UNL.
- 2009-2013 Executive Committee of the Life Sciences, UNL.
- 2009-2012 IANR Nominating committee (Chair, 2011-2012)
- 2007 Grant Review Panel member, USDA NRI Animal welfare and Disease Program, Panel C (Dr. Peter Brayton, National Program Leader).
- 2006 Co-chair Student Events Committee 67<sup>th</sup> Midwest Fisheries and Wildlife Conference
- 2005-2008 SNR Faculty Advisory Committee
- 2004-2006 SNR Research Committee

- 2004-2008 Coordinating Committee, Environmental Studies Program.
- 2003-2005 Scientific Advisory Committee, Nebraska Comprehensive Wildlife Conservation Plan
- 2003 Organised SNR delegation to Math Day recruiting event
- 2003 IEEA Student Grants Committee
- 1997-2000 Organiser of weekly Possingham Lab group meetings including arranging venues, presenters, and leading discussions
- 1996-1999 Departmental Computer Officer - liaise between departmental staff and students and Campus computing support, attend campus wide Computing Committee meetings
- 1996-1998 Roseworthy Campus Representative to the Postgraduate Students Association